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10/734,889	12/12/2003	Robert J. Karschnia	E252.12-0004	1024

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EXAMINER	
MILORD, MARCEAU	

ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/734,889	KARSCHNIA ET AL.	
	Examiner	Art Unit	
	Marceau Milord	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 19-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *32 and 33* is/are allowed.

6)☒ Claim(s) *1-15,19-31 and 34-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1- 15, 19-31, 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tapperson et al (US Patent No 6236334 B1) in view of Nelson et al (US Patent No 6765968 B1).

Regarding claims 1-2, 6-7, Tapperson et al discloses a distributed control and/or monitoring system (fig. 2) comprising: a control/monitoring center; a plurality of field devices (66, 82 of fig. 2) having no hardwired communication link to the control/monitoring center and each other (col. 5, lines 41-54), each field device (82 of fig. 2) comprising: a transducer; a wireless transceiver (108 of fig. 2) for communicating wirelessly (col. 7, lines 3-16; col. 3, lines 28-48; col. 6, lines 33-59).

However, Tapperson et al does not specifically disclose the features a power bus for delivering power to each field device; a power circuit for controlling power delivery from the power bus to the transducer and to the wireless transceiver within the field device.

On the other hand, Nelson et al, from the same field of endeavor, discloses an industrial process control system that includes a remote transmitter that measures a process variable to transmit data over a process control loop. A local data bus interface that includes an active current source and is configured to transmit and/or receive data on a local data bus (col. 1,line 56- col. 2, line 7). Nelson et al shows in figures 2 and 3, a transmitter/receiver modem that transmits and receives messages in the protocol of the industrial process control system between the transmitter and the central station. In addition, the central station supplies power to the transmitter via two-wire process control communication loop through the modem (col. 3, lines 2-16; col. 3, lines 46-67). The microprocessor is coupled to the modem to receive and process messages from the central station and to process and send messages to the central station. A sensor is coupled through a measurement circuit to the microprocessor where the sensor monitors the process variable associated with a transmitter and provides signals representative of process values to microprocessor (col. 2, lines 46-63; col. 4, lines 1-20; col. 5, lines 4-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Nelson to the communication system of Tapperson in order to provide an industrial process control transmitter that includes a process control loop interface and a local data bus interface coupled between the process control loop and a local data bus.

Claims 3 and 5 are similar in scope to claims 1-2, and therefore are rejected under a similar rationale.

Regarding claim 4, Tapperson et al as modified discloses a distributed control and/or monitoring system (fig. 2) wherein each of the plurality of field devices communicates wirelessly with the control/monitoring center (col. 6, lines 31-65).

Regarding claims 8-13, Tapperson et al discloses a distributed system (fig. 2) for monitoring an industrial process, the system comprising: a control/monitoring center; a plurality of field devices (66, 82 of fig. 2) for sensing or altering the industrial process (col. 5, lines 41-54), each field device having a transducer and a wireless transceiver for communicating signals between the field device and the control/monitoring center (col. 7, lines 3-16); and a wire carrying an unfiltered voltage potential for delivering a voltage potential to each of the plurality of field devices (col. 3, lines 28-48; col. 6, lines 33-59).

However, Tapperson et al does not specifically disclose the features a plant-wide power bus comprising a wire, wherein each of the plurality of field devices further comprises: a voltage regulator for controlling power delivered from the plant-wide power bus to the wireless transceiver; wherein each of the plurality of field devices further comprises: a direct connection to a ground.

On the other hand, Nelson et al, from the same field of endeavor, discloses an industrial process control system that includes a remote transmitter that measures a process variable to transmit data over a process control loop. A local data bus interface that includes an active current source and is configured to transmit and/or receive data on a local data bus (col. 1,line 56- col. 2, line 7). Nelson et al shows in figures 2 and 3, a transmitter/receiver modem that transmits and receives messages in the protocol of the industrial process control system between the transmitter and the central station. In addition, the central station supplies power to the

transmitter via two-wire process control communication loop through the modem (col. 3, lines 2-16; col. 3, lines 46-67). The microprocessor is coupled to the modem to receive and process messages from the central station and to process and send messages to the central station. A sensor is coupled through a measurement circuit to the microprocessor where the sensor monitors the process variable associated with a transmitter and provides signals representative of process values to microprocessor (col. 2, lines 46-63; col. 4, lines 1-20; col. 5, lines 4-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Nelson to the communication system of Tapperson in order to provide an industrial process control transmitter that includes a process control loop interface and a local data bus interface coupled between the process control loop and a local data bus.

Regarding claims 14-15, Tapperson et al discloses a distributed control and/or monitoring system (fig. 2), the system comprising: a control/monitoring center; a plurality of field devices (66, 82 of fig. 2), each field device having a transducer (col. 5, lines 41-54); a plurality of wireless transceivers (108, 109, 118, 120 of fig. 2) each wireless transceiver for sending and receiving wireless signals between the control/monitoring center and one or more of the plurality of field devices (66 of fig. 2; col. 6, lines 31-65), each wireless transceiver (108 of fig. 2) being in electrical communication with at least one of the plurality of field devices (66, 82 of fig. 2;col. 3, lines 28-48; col. 6, lines 33-59).

However, Tapperson et al does not specifically disclose the features a power supplies for supplying power from a plant-wide power bus to the wireless transceivers and to the plurality of field devices.

On the other hand, Nelson et al, from the same field of endeavor, discloses an industrial process control system that includes a remote transmitter that measures a process variable to transmit data over a process control loop. A local data bus interface that includes an active current source and is configured to transmit and/or receive data on a local data bus (col. 1,line 56- col. 2, line 7). Nelson et al shows in figures 2 and 3, a transmitter/receiver modem that transmits and receives messages in the protocol of the industrial process control system between the transmitter and the central station. In addition, the central station supplies power to the transmitter via two-wire process control communication loop through the modem (col. 3, lines 2-16; col. 3, lines 46-67). The microprocessor is coupled to the modem to receive and process messages from the central station and to process and send messages to the central station. A sensor is coupled through a measurement circuit to the microprocessor where the sensor monitors the process variable associated with a transmitter and provides signals representative of process values to microprocessor (col. 2, lines 46-63; col. 4, lines 1-20; col. 5, lines 4-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Nelson to the communication system of Tapperson in order to provide an industrial process control transmitter that includes a process control loop interface and a local data bus interface coupled between the process control loop and a local data bus.

Regarding claim 19, Tapperson et al discloses a method for retrofitting an existing field device network for wireless communications (fig. 2), the method comprising: installing a first wireless transceiver (108 of fig. 2) in communication with a control/monitoring center (col. 5, lines 41-54); installing a second wireless transceiver (109 of fig. 2) on an existing power bus and

in communication with one or·more field devices (66, 82 of fig. 2, col. 7, lines 3-16;col. 3, lines 28-48; col. 6, lines 33-59).

However, Tapperson et al does not specifically disclose the the step of configuring the second wireless transmitter on an existing plant-wide to communicate with the one or more field devices and to transmit data wirelessly from the one or more field devices to the control/monitoring center in addition to data transmitted over an existing communication link.

On the other hand, Nelson et al, from the same field of endeavor, discloses an industrial process control system that includes a remote transmitter that measures a process variable to transmit data over a process control loop. A local data bus interface that includes an active current source and is configured to transmit and/or receive data on a local data bus (col. 1,line 56- col. 2, line 7). Nelson et al shows in figures 2 and 3, a transmitter/receiver modem that transmits and receives messages in the protocol of the industrial process control system between the transmitter and the central station. In addition, the central station supplies power to the transmitter via two-wire process control communication loop through the modem (col. 3, lines 2-16; col. 3, lines 46-67). The microprocessor is coupled to the modem to receive and process messages from the central station and to process and send messages to the central station. A sensor is coupled through a measurement circuit to the microprocessor where the sensor monitors the process variable associated with a transmitter and provides signals representative of process values to microprocessor (col. 2, lines 46-63; col. 4, lines 1-20; col. 5, lines 4-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Nelson to the communication system of Tapperson in order

to provide an industrial process control transmitter that includes a process control loop interface and a local data bus interface coupled between the process control loop and a local data bus.

Regarding claim 20, Tapperson et al as modified discloses a method for retrofitting an existing field device network for wireless communications (fig. 2), further comprising: installing a "smart" field device on the field bus network, the "smart" field device having a wireless transceiver, the "smart" field device for providing diagnostic information to the control center (col. 5, lines 28-48).

Regarding claim 21, Tapperson et al discloses a distributed field device system (fig. 2) comprising: a single-wire power bus; and a plurality of wireless field devices (66, 82 of fig. 2), each wireless field device (66, 82 of fig. 2) comprising: a transducer; a wireless transceiver devices (108 of fig. 2) for sending information from the transducer to a control center (col. 5, lines 41-54; col. 3, lines 28-48; col. 6, lines 33-59).

However, Tapperson et al does not specifically disclose the features a power circuitry for drawing adequate power from the single-wire power bus to power the transducer and the wireless transceiver.

On the other hand, Nelson et al, from the same field of endeavor, discloses an industrial process control system that includes a remote transmitter that measures a process variable to transmit data over a process control loop. A local data bus interface that includes an active current source and is configured to transmit and/or receive data on a local data bus (col. 1,line 56- col. 2, line 7). Nelson et al shows in figures 2 and 3, a transmitter/receiver modem that transmits and receives messages in the protocol of the industrial process control system between the transmitter and the central station. In addition, the central station supplies power to the

transmitter via two-wire process control communication loop through the modem (col. 3, lines 2-16; col. 3, lines 46-67). The microprocessor is coupled to the modem to receive and process messages from the central station and to process and send messages to the central station. A sensor is coupled through a measurement circuit to the microprocessor where the sensor monitors the process variable associated with a transmitter and provides signals representative of process values to microprocessor (col. 2, lines 46-63; col. 4, lines 1-20; col. 5, lines 4-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Nelson to the communication system of Tapperson in order to provide an industrial process control transmitter that includes a process control loop interface and a local data bus interface coupled between the process control loop and a local data bus.

Regarding claim 22, Tapperson et al as modified discloses a distributed field device system (fig. 2) wherein each of the plurality of wireless field devices is electrically grounded (col. 6, lines 34-59).

Regarding claims 23-25, Tapperson et al discloses a field device comprising: a transducer; a wireless transceiver (108 of fig. 2); a power terminal for connecting the field device to a power bus; a ground connection for electrically grounding the field device (col. 7, lines 3-16;col. 3, lines 28-48; col. 6, lines 33-59).

However, Tapperson et al does not specifically disclose the features an internal power supply circuit connected to the power terminal and the ground connection for supplying power to the transducer and the wireless transceiver.

On the other hand, Nelson et al, from the same field of endeavor, discloses an industrial process control system that includes a remote transmitter that measures a process variable to

transmit data over a process control loop. A local data bus interface that includes an active current source and is configured to transmit and/or receive data on a local data bus (col. 1,line 56- col. 2, line 7). Nelson et al shows in figures 2 and 3, a transmitter/receiver modem that transmits and receives messages in the protocol of the industrial process control system between the transmitter and the central station. In addition, the central station supplies power to the transmitter via two-wire process control communication loop through the modem (col. 3, lines 2-16; col. 3, lines 46-67). The microprocessor is coupled to the modem to receive and process messages from the central station and to process and send messages to the central station. A sensor is coupled through a measurement circuit to the microprocessor where the sensor monitors the process variable associated with a transmitter and provides signals representative of process values to microprocessor (col. 2, lines 46-63; col. 4, lines 1-20; col. 5, lines 4-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Nelson to the communication system of Tapperson in order to provide an industrial process control transmitter that includes a process control loop interface and a local data bus interface coupled between the process control loop and a local data bus.

Regarding claims 26-28, Tapperson et al discloses a field device (66, 82 of fig. 2) comprising: a housing; a circuit disposed within the housing, the circuit comprising: a wireless transceiver (108 of fig. 2) for wireless communication with a control/monitoring center (col. 7, lines 3-16; col. 3, lines 28-48; col. 6, lines 33-59).

However, Tapperson et al does not specifically disclose the features of an electrical terminal for delivering power to the wireless transceiver and the transducer from an existing power circuit, wherein the existing power circuit is an AC or DC circuit.

On the other hand, Nelson et al, from the same field of endeavor, discloses an industrial process control system that includes a remote transmitter that measures a process variable to transmit data over a process control loop. A local data bus interface that includes an active current source and is configured to transmit and/or receive data on a local data bus (col. 1,line 56- col. 2, line 7). Nelson et al shows in figures 2 and 3, a transmitter/receiver modem that transmits and receives messages in the protocol of the industrial process control system between the transmitter and the central station. In addition, the central station supplies power to the transmitter via two-wire process control communication loop through the modem (col. 3, lines 2-16; col. 3, lines 46-67). The microprocessor is coupled to the modem to receive and process messages from the central station and to process and send messages to the central station. A sensor is coupled through a measurement circuit to the microprocessor where the sensor monitors the process variable associated with a transmitter and provides signals representative of process values to microprocessor (col. 2, lines 46-63; col. 4, lines 1-20; col. 5, lines 4-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Nelson to the communication system of Tapperson in order to provide an industrial process control transmitter that includes a process control loop interface and a local data bus interface coupled between the process control loop and a local data bus.

Regarding claims 29-30, Tapperson et al discloses a field device (fig. 2) comprising: a transducer and/or an actuator; a wireless transceiver (108 of fig. 2); and a power supply circuit for delivering power to the transducer and/or the actuator and to the wireless transceiver (col. 3, lines 28-48; col. 6, lines 33-59).

However, Tapperson et al does not specifically disclose the features of an electrical terminal for delivering power to the wireless transceiver and the transducer from an existing power circuit; wherein the existing power circuit is an AC or DC circuit; wherein the power supply circuit is connected to a standard electrical outlet.

On the other hand, Nelson et al, from the same field of endeavor, discloses an industrial process control system that includes a remote transmitter that measures a process variable to transmit data over a process control loop. A local data bus interface that includes an active current source and is configured to transmit and/or receive data on a local data bus (col. 1,line 56- col. 2, line 7). Nelson et al shows in figures 2 and 3, a transmitter/receiver modem that transmits and receives messages in the protocol of the industrial process control system between the transmitter and the central station. In addition, the central station supplies power to the transmitter via two-wire process control communication loop through the modem (col. 3, lines 2-16; col. 3, lines 46-67). The microprocessor is coupled to the modem to receive and process messages from the central station and to process and send messages to the central station. A sensor is coupled through a measurement circuit to the microprocessor where the sensor monitors the process variable associated with a transmitter and provides signals representative of process values to microprocessor (col. 2, lines 46-63; col. 4, lines 1-20; col. 5, lines 4-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Nelson to the communication system of Tapperson in order to provide an industrial process control transmitter that includes a process control loop interface and a local data bus interface coupled between the process control loop and a local data bus.

Regarding claims 31, Tapperson et al as modified discloses a field device (fig. 2) wherein the field device is connected wirelessly with a network (col. 6, lines 33-59; col. 7, lines 3-16).

Regarding claims 34-39, Tapperson et al discloses a distributed control and/or monitoring system (fig. 2) comprising: a control/monitoring center; a plurality of field devices (66 of fig. 2; col. 6, lines 31-65) having no hardwired communication link to the control/monitoring center and each other wherein each of the plurality of field devices communicate wirelessly with the control/monitoring center through a self-organizing wireless network 66, 82 of fig. 2;col. 3, lines 28-48; col. 6, lines 33-59).

However, Tapperson et al does not specifically disclose the features of a wireless transceiver for communicating wirelessly; and a common power bus for delivering power to each field device, wherein each field device further comprises: a power circuit for controlling power delivery from the power bus to the transducer and to the wireless transceiver within the field device.

On the other hand, Nelson et al, from the same field of endeavor, discloses an industrial process control system that includes a remote transmitter that measures a process variable to transmit data over a process control loop. A local data bus interface that includes an active current source and is configured to transmit and/or receive data on a local data bus (col. 1,line 56- col. 2, line 7). Nelson et al shows in figures 2 and 3, a transmitter/receiver modem that transmits and receives messages in the protocol of the industrial process control system between the transmitter and the central station. In addition, the central station supplies power to the transmitter via two-wire process control communication loop through the modem (col. 3, lines 2-16; col. 3, lines 46-67). The microprocessor is coupled to the modem to receive and process

messages from the central station and to process and send messages to the central station. A sensor is coupled through a measurement circuit to the microprocessor where the sensor monitors the process variable associated with a transmitter and provides signals representative of process values to microprocessor (col. 2, lines 46-63; col. 4, lines 1-20; col. 5, lines 4-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Nelson to the communication system of Tapperson in order to provide an industrial process control transmitter that includes a process control loop interface and a local data bus interface coupled between the process control loop and a local data bus.

Allowable Subject Matter

3. Claims 32-33 are allowed.

Response to Arguments

4. Applicant's arguments with respect to claims 1-15, 19-31, 34-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 571-272-7853. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MARCEAU MILORD

Marceau Milord

Primary Examiner

Art Unit 2618

MARCEAU MILORD
PRIMARY EXAMINER